D R A F T

TOWN OF SCITUATE STORMWATER REGULATIONS
May 18, 2009

Changes from the previous draft for discussion on 6/11/2009 are noted in red italics below

1. PURPOSE. The purpose of these regulations is to implement the Town of Scituate Stormwater Bylaw adopted by March, 2008 Annual Town Meeting. The Stormwater Bylaw is included as Section 32050 of the Town of Scituate General Bylaws.

2. DEFINITIONS. The following definitions describe the meaning of the terms used in these regulations:

Agent – For the purpose of the Stormwater regulations, the Planning Board's agent will be the Town Planner. The Conservation Commission's agent will be the Conservation Agent.

Alteration shall include, without limitation, the following activities:

- Changing of existing drainage characteristics, adding impervious area or changing type of land cover; or changing sedimentation patterns, flow patterns or flood retention characteristics;
- Dumping, discharging or filling with any material, or removal of material, which would alter elevations or change drainage patterns;
- Impacts of construction on stormwater flow, including erosion, sedimentation and commencement of pollutant sources during the construction and development process;
- Driving of piles, erection or expansion of buildings or structures of any kind;
- Destruction of plant life, including clearing of trees or removal of vegetation.

Biofilter swales, water quality swales, and vegetated drainage channels refer to narrow grassed depressions which contain stormwater, allowing it to flow through at a very slow rate. These may also be used to infiltrate stormwater within a series of cells formed by berms or check dams.

Bioretention areas are an example of a BMP that may be designed to act as a filtering practice or an infiltration device. Bioretention areas that act solely as filters have an underdrain that captures runoff and conveys it to another BMP before it is discharged to a surface water, a wetland, or another BMP. These bioretention areas may be lined. Bioretention areas designed to infiltrate do not have those features. To distinguish the two types of bioretention areas, the Massachusetts Stormwater Handbook refers to bioretention areas designed to infiltrate as "exfiltrating bioretention areas" and other bioretention areas as "filtering bioretention areas."

Critical Environmental Areas include wetlands as defined by the Wetlands Protection Act, MGL Ch. 131 S. 40, the local Wetlands Protection Bylaw, Town of Scituate Code of Bylaws, Section 30770, Outstanding Resource Waters as designated in 314 CMR 4.00, Special Resource Waters as designated in 314 CMR 4.00, recharge areas for public water supplies as defined in 310 CMR 22.02 (Zone Is, Zone IIs and Interim Wellhead Protection Areas for groundwater sources and Zone As for surface water sources), bathing beaches as defined in 105 CMR 445.000, cold-water fisheries as defined in 310 CMR 10.04 and 314 CMR 9.02, and shellfish growing areas as defined in 310 CMR 10.04 and 314 CMR 9.02.

Green roofs[1] can include a wide range of roof vegetation or landscape environments, using soil or another growing medium from 3.5-inch to 24-inch deep, and are generally used on larger commercial or multifamily buildings.

[1] From the website of the Low Impact Development Center, Beltsville, MD, www.lid-stormwater.net

Illustration of green roof

Impervious Surface(s) includes any developed area with a hard surface such as pavement or roofs that prevents the infiltration or absorption of water into the soil.

Infiltration is the movement of water through the surface of land to the subsoil.

Low Impact Development (LID) includes innovative techniques to manage stormwater that are modeled after natural hydrologic characteristics. They most frequently manage rainfall at the source using decentralized, micro-scale controls such as small cost-effective landscape features. These include, but are not limited to, biofilter swales, water quality swales, and vegetated drainage channels; bioretention cells, green roofs, open space, and rain gardens. See the Massachusetts Stormwater Handbook for more information.

Massachusetts Stormwater Handbook refers to the most recent edition of the handbook, which can be found on-line at http://mass.gov/dep/water/wastewater/stormwat.htm.

Massachusetts Stormwater Management Standards (MSWMS) includes ten stormwater management standards found in the Massachusetts Stormwater Handbook, and associated performance criteria that were established jointly by the Massachusetts Department of Environmental Protection (DEP) and the Office of Coastal Zone Management in March 1997 and revised in January 2008.

Peak Flow, Peak Discharge Rate Peak flow is the maximum volume of stormwater passing a particular location during a storm event. Peak discharge is the maximum rate of stormwater flow and is measured in units of volume/time (e.g. ft^3/sec, m^3/sec, acre-feet/hour.) The peak discharge rate is a primary design variable for the design of stormwater runoff facilities such as pipe systems, storm inlets and culverts, and small open channels.

Peak Flow Attenuation refers to the reduction of peak flows and may include a delay of flows through natural or man-made means and/or a reduction in volume.

Permeable or porous pavement includes pavers and special pavement systems such as interlocking concrete pavement which incorporate air voids in their design to allow water to pass through

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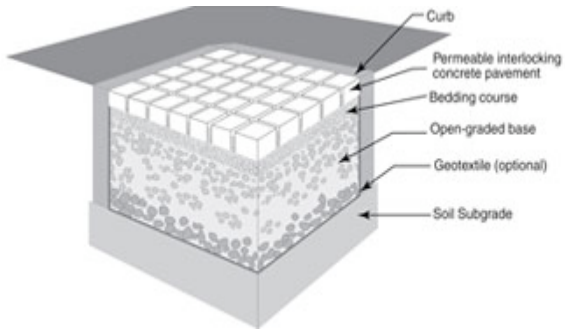
[2] Schematic from the website of the Interlocking Concrete Pavement Institute, http://www.icpi.org/design/permeable_pavers.cfm.

[3] Text and photographs from the website of the Low Impact Development Center, Beltsville, MD, www.lid-stormwater.net.

[4] The required minimum infiltration rate is 0.17 inches per hour. D soils have an infiltration rate that is below this minimum. To determine the infiltration rate, proponents must perform a soil evaluation using the methodologies set forth in Volume 3.

to be absorbed into the soil. An example of permeable interlocking concrete pavement is illustrated on the next page. The void spaces among the crushed stones store water and infiltrate it back into the soil subgrade.

Post-development refers to the condition of a site, especially with regard to stormwater runoff, after development is completed.



Permable pavement[2]

Pre-development refers to the condition of a site, especially with regard to stormwater runoff, before development has started.

Pretreatment is the reduction or elimination of contaminants from stormwater prior to discharge or infiltration.

Rain gardens also known as bioretention cells, contain specific layers of soil, sand, and organic mulch which naturally filter the site's runoff, substantially reducing common homeowner pollutants such as lawn fertilizers and driveway oils and providing protection for the receiving waterways. They are planted in low-lying areas. Designing with rain gardens in a low density residential area can

- establish a unique sense of place by featuring plants native to the area
- encourage environmental stewardship and community pride
- provide additional environmental benefits (habitat for wildlife and native plant species, improved air quality, and mitigation of urban climates.) [3] See picture at right.

Recharge is the process in which water from precipitation or runoff infiltrates the ground to replenish the groundwater supply.

Stormwater management system for a site includes the natural drainage patterns and manmade improvements which collect, disperse and/or infiltrate stormwater.

Stormwater conveyance is any pipe or manmade channel which carries stormwater and has a discharge at a single point.

Structural Best Management Practices (BMP's) are manmade structures or site features designed to treat and/or manage stormwater in conformance with the Massachusetts Stormwater Management Standards. Different types of BMP's are designed for pretreatment, treatment, convey-

ance or infiltration of stormwater.

Total Suspended Solids consists of particulate matter such as soil or other particles, typically suspended in and carried in stormwater.

Water quality treatment is treatment of runoff to remove pollutants. Typical pollutants of concern include sand, silt, and other suspended solids; metals such as copper, lead, and zinc; nutrients (e.g., nitrogen and phosphorous); certain bacteria and viruses; and organics such as petroleum hydrocarbons and pesticides. Methods of pollutant removal include sedimentation/settling, filtration, infiltration, plant uptake, ion exchange, adsorption, and bacterial decomposition. Floatable pollutants such as oil, debris, and scum can be removed with separator structures.

3. AUTHORITY.

A. Adoption. These regulations were adopted by the Planning Board in accordance with Section 5 of the Stormwater Bylaw and may be periodically amended by the Planning Board in accordance with the procedures outlined in that section.

B. Relationship to Wetlands Protection Act and Wetlands Bylaw. These regulations do not replace the requirements of the Wetlands Protection Act or Local Wetlands Bylaw or any Rules and Regulations adopted thereunder. When land alteration is subject to Conservation Commission jurisdiction under the Wetlands Protection Act or the Local Wetlands Bylaw, and the Conservation Commission has adopted by reference the performance standards of the Stormwater Bylaw and these regulations, the Planning Board may delegate the administration, enforcement and monitoring of these regulations to the Conservation Commission.

4. APPLICABILITY.

A. Thresholds for Review of Proposals. *The thresholds below for determining the proposals subject to the Stormwater Bylaw are incorporated in the Stormwater Regulations:*

1. *All development and redevelopment projects that will disturb or alter over 15,000 sq. ft. of land, any development of an undeveloped parcel that will increase stormwater runoff, or a net increase of 25% or more of impervious area even if that alteration is conducted over separate phases and/or by separate owners.*
2. *All development and redevelopment projects that will disturb or alter over 1,000 square feet of land on slopes greater than 15%, even if that alteration is conducted over separate phases and/or by separate owners.*
3. *Construction of a new drainage system or alteration of a drainage system, serving a drainage area of more than 15,000 sq. ft. of land.*
4. *Any development or redevelopment involving "land uses with higher potential pollutant loads," as defined in the Massachusetts Stormwater Standards, Volume 1, Stormwater Policy Handbook. Land uses with higher potential pollutant loads include auto salvage yards, auto fueling facilities (gas stations), fleet storage yards, high-intensity commercial parking lots, road salt storage areas, commercial nurseries, outdoor storage and loading areas of hazardous substances, and marinas.*

B. Alteration of land area, clearing or changes in grading totaling less than *40,000 sq.*

ft. in area shall be reviewed by the Town Planner or Conservation Agent, who may recommend modifications to make proposed land alteration better meet the performance standards of these regulations. *Any proposal resulting in alteration of from 15,000 to 40,000 sq. ft. where it appears difficult to reduce or maintain off-site stormwater flows relative to pre-development stormwater peak flow and/or quantity, shall be referred to the Planning Board or Conservation Commission for a Public Hearing. All alteration of greater than 40,000 sq. ft. subject to review under the Stormwater Bylaw shall require a stormwater permit from the Planning Board or Conservation Commission as provided below.* A phased project may be subject to these regulations based on the combined area of land alteration expected for the entire project.

Prior to alteration of land of an area *40,000 sq. ft.* or greater, a Stormwater Permit shall be approved by the Planning Board or the Conservation Commission as provided in Section 3 above, except for exempt land alteration as described in Paragraph B below. A Stormwater Permit must be obtained prior to the issuance of a building permit when *40,000 sq. ft.* of land has been, or will be, altered in connection with the development authorized by the building permit.

C. Exempt Land Alteration. These regulations apply to all land alteration except the following activities which are exempt from the Town of Scituate Stormwater Bylaw:

1. Construction on an individual lot within a subdivision that has previously been issued a Stormwater Permit, or where the plan conforms to recommendations of the town's consulting engineer so long as development or alteration of the individual lot conforms to the grading, building envelopes, and drainage patterns described in the subdivision's Stormwater Permit.

2. Landscaping for a single-family home that involves the addition or removal of fewer than 100 cubic yards of soil material or alteration of less than two feet of elevation with maintenance of existing drainage patterns.

3. Repair and replacement of existing roofs.

4. Construction of walls and fencing that will not alter existing drainage patterns.

5. Use, maintenance, and improvement of agricultural land.

6. Construction of utilities, other than drainage, that will not alter existing terrain or drainage patterns, including repairs to existing septic systems when required by the Board of Health.

7. Emergency repairs to any existing stormwater management facility.

8. Routine maintenance and improvement of town-owned public ways.

9. Activity which is the subject of a Notice of Intent approved by the Conservation Commission prior to the adoption of these regulations.

5. PROCEDURE FOR ISSUING STORMWATER PERMITS.

A. Pre-Application Consultation. Applicants are strongly encouraged to schedule a pre-application meeting with the Town Planner and/or the Conservation Agent, as applicable, to review the proposed development plans at the earliest feasible time.

B. Application for a Stormwater Permit. Applications for a Stormwater Permit shall be submitted by the owner of the site or a holder of a bona fide Purchase and Sale Agreement for the property and shall be filed with the Planning Board office. The Town Planner shall determine whether a Stormwater Permit is required, and after consultation with the Conservation Agent, whether it must be issued by the Planning Board or Conservation Commission. All applications shall be date stamped at the Town Clerk's office when they are determined to be complete.

C. Contents of Application. Normally, a site plan used for a building permit application shall be adequate for review of proposals which will alter less than 15,000 sq. ft. of land. The Town Planner and Conservation Agent may request *information necessary to complete the Mass. Stormwater Handbook TSS Removal Calculation Sheet; to meet similar standards as those contained in the Mass. DEP Stormwater Report; generally, delineation of watersheds with drainage calculations and* additional information indicated by the Massachusetts Stormwater Handbook if needed to review such proposals. All such requests shall be made within *five* days of their receipt of the building permit.

The application for a Stormwater Permit *issued by the Planning Board or Conservation Commission following a Public Hearing* shall include a cover letter, twelve folded copies of the Land Alteration and Stormwater Management Plan and applicable fees. The cover letter shall contain a narrative description of pre- and post-development conditions and Stormwater Management System with supporting calculations, including the peak discharge rate for the 24-hour post-development 1-year storm event, the pre- and post-development volume of surface runoff for the 10-year storm event, and a downstream analysis of the 100-year storm event shall be used, to ensure no increased downstream flooding will occur. The cover letter shall include a discussion of whether the Stormwater Management System meets the performance standards of these regulations, and the use of LID techniques. If LID techniques were not used, the reasons shall be given.

The Land Alteration and Stormwater Management Plan shall include one or more sheets or drawings, prepared by a Registered Land Surveyor at a scale which allows all information to be clearly legible, showing the following site information:

1. Contact information, including the name, address and telephone numbers of all owner(s) and those with a legal interest in the property, or their representatives, and their engineers;

2. The Town of Scituate Assessor's Map, Block and Lot number(s) and the boundaries of the lot(s) where development or alteration is proposed;

3. The location and area of existing and proposed structures, impervious surfaces, septic systems, and any land which will be cleared, excavated or graded;

4. The boundaries and area of any areas subject to the Wetlands Protection Act or Local Wetlands Bylaw, specifically showing any areas subject to ponding or swamping;

5. The delineation of the 100 year flood plain and any Critical Environmental Areas;

6. Pre- and post-development topographic elevations at a minimum of 2' intervals and watersheds, including off-site contributing areas. Areas of slopes greater than 15% shall be highlighted;

7. Pre- and post-development soil types and their hydrologic soil groups based on the most current Natural Resources Conservation Service (NRCS) soils map of the site, including the susceptibility to erosion based on NRCS classification;

8. Pre- and post-development stormwater flow path(s), design points for each watershed and soil log locations;

9. The existing land use and the location, type and area of existing and proposed vegetation, sufficient to determine appropriate runoff curve numbers. If any areas are intended to be preserved in their natural state, the method to be used for their protection;

10. Existing and proposed utilities, including any public or private water supplies on or within 100' of the property;

11. The location of existing and proposed easements;

12. A written description of the proposed Stormwater Management System as described in Town of Scituate Subdivision Rules and Regulations Section 6.3.4 2. with the size, location and type of components, including but not limited to LID techniques, BMP's, and any structure or feature of the site that serves to treat, collect or convey stormwater.

13. Location and results of observation pits and soil test logs required by the Town of Scituate Subdivision Rules and Regulations, or by the Board of Health;

14. The method proposed for treatment of stormwater when discharge is within a buffer to a Critical Environmental Area;

15. A quantitative evaluation of the techniques proposed to mitigate or attenuate the volume and rate of stormwater flows, including drainage calculations certified by a Massachusetts licensed Professional Engineer sufficient to show the adequacy of drainage structures for the volume and rate of stormwater runoff;

16. An Operation and Maintenance Plan for components of the Stormwater Management System as described in Town of Scituate Subdivision Rules and Regulations Section 6.3.4 6. paragraphs a. through k. and, when the Stormwater Management System will serve property with more than one owner, a Draft Homeowner's Association Agreement as described in Section 6.3.4 6.;

17. An Erosion and Sedimentation Control Narrative and Plan as described in Town of Scituate Subdivision Rules and Regulations Section 6.3.3 7 including the locations of temporary and permanent erosion and sediment control measures.

Addition0al information may be required by the Planning Board or the Conservation Commission to show the direction and estimated volume and rate of pre-development and post-development stormwater flows.

D. Distribution of Stormwater Permit Application and Plans. Following receipt of a completed permit application, comments shall be requested from the Board of Health, Department of Public Works, Water Resources Committee and other town boards or authorities as appropriate.

E. Public Hearing. A Public Hearing shall be held prior to the issuance of a Stormwater Permit *by the Planning Board or Conservation Commission*. If other approvals from the Planning Board or Conservation Commission are required, the Public Hearing may be

held concurrently with any public hearing required for those approvals, such as a Definitive Subdivision Plan, Special Permit or Notice of Intent.

Notice of public hearings by the Planning Board shall be made according to the procedure outlined in MGL Chapter 41 Section 81-T. Notice of public hearings by the Conservation Commission shall be made according to the procedure required for Notices of Intent.

F. Issuance of Stormwater Permit. After review of the application and comments received from other boards, and following the close of a Public Hearing, the Planning Board or the Conservation Commission shall either:

1. Approve the application and issue a Stormwater Permit if it finds that the proposed plan meets the objectives and requirements of the Stormwater Bylaw and these regulations.

2. Approve the application and issue a Stormwater Permit with conditions, modifications, or restrictions as necessary to ensure protection of water resources or to meet the objectives and requirements of the Stormwater Bylaw and these regulations.

3. Disapprove the application and deny a Stormwater Permit if it finds the proposed plan fails to meet the objectives of the Stormwater Bylaw, in which case the reason(s) will be provided to the applicant with guidance on how a proposal can best be modified to meet these objectives.

Notice of this action shall be provided to the Town Clerk within thirty-five days of the town's receipt of the application. This time may be extended by mutual agreement of the applicant and Planning Board or Conservation Commission. Standard conditions will typically include a requirement for surety or a Performance Guarantee to insure completion of all improvements.

G. Review by Consulting Engineer. The Planning Board or the Conservation Commission may obtain services of a consulting engineer as needed to review plans, monitor site work and enforce Stormwater Permits under the Stormwater Bylaw. All such services shall be provided at the applicant's expense.

6. PERFORMANCE STANDARDS.

A. Massachusetts Stormwater Management Standards. All land alteration must meet or exceed the Massachusetts Stormwater Management Standards (MSWMS), as follows:

1. No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

2. Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

3. Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good

operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the Stormwater Management System is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

4. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

   a.) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;

   b.) Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and

   c.) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard

1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

8. A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

9. A long-term operation and maintenance plan shall be developed and implemented to ensure that Stormwater Management Systems function as designed.

10. All illicit discharges to the Stormwater Management System are prohibited.

Project proponents seeking to demonstrate compliance with these regulations to the maximum extent practicable shall demonstrate that:

a.) They have made all reasonable efforts to meet each of the Standards;
b.) They have made a complete evaluation of possible stormwater management measures, including environmentally sensitive site design, low impact development techniques that minimize land disturbance and impervious surfaces, structural stormwater best management practices, pollution prevention, erosion and sedimentation control, and proper operation and maintenance of stormwater best management practices; and
c.) If full compliance with the Standards cannot be achieved, they are implementing the highest practicable level of stormwater management.

B. Use of LID techniques. When proposing a development or redevelopment project subject to these regulations, proponents shall consider environmentally sensitive site design that incorporates low impact development techniques in addition to stormwater best management practices. If LID techniques were determined not practical to incorporate into the site design, documentation shall be provided of those considered and the reasons they were not used.

C. Disconnection of Impervious Surfaces. Impervious surfaces shall be disconnected to allow recharge in the land between them, to the greatest extent possible. Proponents shall consider decentralized systems that involve the placement of a number of small treatment and infiltration devices located close to the various impervious surfaces that generate stormwater runoff in place of a centralized system comprised of closed pipes that direct all the drainage from the entire site into one large dry detention basin.

D. Use of BMP's. The following BMPs may be used to infiltrate stormwater in compliance with Standard 3: dry wells; infiltration basins; infiltration trenches; subsurface structures; leaching catch basins; exfiltrating bioretention areas and porous pavement. Infiltration BMPs must be designed, constructed, operated, and maintained in accordance with the specifications and procedures set forth in Volume 2 of the Massachusetts Stormwater Handbook. To size infiltration BMPs so that they infiltrate the required recharge volume, proponents may use the static method or one of the two dynamic methods specified in Volume 3 of the Massachusetts Stormwater Handbook. To ensure the long-term operation of infiltration BMPs, pretreatment is required before discharge to an infiltration BMP.

When designing infiltration BMPs, adequate subsurface information needs to be provided[4]. Infiltration systems must be installed in soils capable of absorbing the recharge volume

(i.e. not D soils). Infiltration structures must be able to drain fully within 72 hours. In addition, there must be at least a two-foot separation between the bottom of the infiltration structure and the seasonal high groundwater table. For infiltration of stormwater runoff from land uses with higher potential pollutant loads, see requirements of the Massachusetts Stormwater Handbook.

E. Removal of Total Suspended Solids. A removal rate of 80% or greater for Total Suspended Solids shall be required, except within the Water Resource Protection District, where a 90% removal rate shall be required. This district is as shown on the most recent Town of Scituate Zoning Map.

7. SITE DESIGN CRITERIA. All projects shall meet the following design criteria:

A. Buffers to critical environmental areas. No regulated development activity shall be permitted within 50 (fifty) feet of a critical environmental area.

B. Minimization of Impervious Surfaces. Impervious surfaces shall be minimized to the greatest extent possible.

C. Use of existing vegetation. To the greatest extent possible, existing vegetation shall be maintained so that it can continue to absorb and treat stormwater. Where this vegetation is maintained, it shall be identified as a non-disturbance or no-cut area on subdivision or site plans, and on contractor's specifications.

D. Infiltration of roof runoff. Runoff from non-metal roofs (all except galvanized steel and copper) may be discharged to a dry well without any pretreatment.

8. CONSTRUCTION MONITORING.

A. Construction Inspections. Periodic inspections shall be required to insure that the Stormwater Management System is constructed according to the approved plan and that stormwater, erosion and sedimentation are properly managed during the construction process.

These construction inspections may be conducted by a consulting engineer(s) approved by the Planning Board or Conservation Commission or other designee(s) of the Planning Board or Conservation Commission. The person or agency conducting the inspection shall provide written reports of inspections at the development owner's expense. Inspection reports shall include information on any variations from the Stormwater Management Plan. The Planning Board or Conservation Commission may require the submittal of as-built plans during construction depicting the construction conditions of the Stormwater Management System and grading on the site.

B. Final Construction Inspection and As-Built Plan. After the Stormwater Management System has been constructed and before the surety or Performance Guarantee has been released, the applicant shall submit a final as-built plan detailing the Stormwater Management System as installed. All as-built plans shall be prepared by a Massachusetts licensed Professional Engineer and shall include all components of the Stormwater Management System including 2' topographic contours of the drainage area and other completed grading.

The consulting engineer or designee of the Planning Board or Conservation Commission shall inspect the system to confirm its construction according to the approved plan and

evaluate its effectiveness in an actual storm. If the system is found to be adequate, with all work completed in conformance with the Bylaw and these regulations, the Planning Board or Conservation Commission, as applicable, shall issue a Certificate of Completion.

C. Correction of Inadequate Systems. If the system is found to be inadequate because of evidence of operational failure it shall be corrected before the surety or Performance Guarantee is released, even if it was constructed according to plan. Examples of operational failure shall be limited to: errors in infiltrative capacity, errors in the maximum groundwater elevation, failure to properly define or construct flow paths, or erosive discharges from basins or other locations.

9. ONGOING MAINTENANCE. The owner of property containing a Stormwater Management System, or any other person or entity in control of such property, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and sedimentation controls, and other protective devices in accordance with the approved plans and these regulations.

A. Maintenance Agreement. A maintenance agreement shall be issued between the Town and the current and future owners of the Stormwater Management System. This agreement shall identify the party responsible for maintenance the system and conducting long-term inspections.

B. Standard Maintenance. The following are the minimum standards for the maintenance of Stormwater Management Systems:

1. Stormwater management systems shall be inspected annually and cleared of debris, sediment and vegetation when they affect the function and/or design capacity of the system.

2. Where lack of maintenance is causing or contributing to a stormwater or water quality problem, immediate action shall be taken to address the maintenance problem.

3. The applicant shall post acceptable surety to cover the cost of maintaining the system. The cost shall cover anticipated maintenance costs, including full or partial replacement if necessary, for a design life of twenty years.

4. The surety mechanism shall be structured to allow the Town to draw funds as necessary to conduct the maintenance of the system.

C. Inspection Reports. Inspection reports shall be submitted to and maintained by the board which issued the Stormwater Permit. Inspection reports for Stormwater Management Systems shall include the date of inspection, the name and contact information of the inspector, and the condition and need for maintenance of:
Pretreatment devices; Vegetation or filter media; Fences or other safety devices; Spillways, valves or other control structures; Embankments, slopes and safety benches; Reservoir or treatment areas; inlet and outlet channels and structures; underground drainage; Sediment and debris accumulation in storage and forebay areas; any non-structural practices; and any other item that could affect the proper function of the stormwater management system.

10. ENFORCEMENT. A Stormwater Permit shall be binding on the current owner and all future owners of the property. The Planning Board, Conservation Commission, Town Planner, Conserva-

tion Agent or their authorized agents shall enforce the Stormwater Bylaw and these regulations. They may pursue all civil, criminal and non-criminal remedies available for violations including those described below.

A. Violations.

1. **Definition.** Any regulated development activity or construction activity that has commenced or is conducted contrary to these regulations shall be considered a violation of the Stormwater Bylaw and, at the discretion of the Planning Board, Conservation Commission, or their agents, may be restrained by injunction or otherwise abated by restoration of the site or approval of a Stormwater Permit in a manner which conforms with these regulations. A new Stormwater Permit may be required if development activity is not in compliance with the conditions of an existing Stormwater Permit.

2. **Requirements for Notice.** If the Planning Board or the Conservation Commission or their agents determine that regulated development activity or construction activity is not being carried out in accordance with the requirements of these regulations, they/she/he shall issue a written notice of violation to the owner of the property. Owners receiving a notice of violation will be required to halt all construction activities. This may include a "stop work order" to be in effect until the Planning Board or Conservation Commission confirms that all development activity is in compliance and the violation has been satisfactorily addressed. The notice of violation shall contain:

   a. The name and address of the owner applicant;
   b. The address or the description of the building, structure, or land upon which the violation is occurring;
   c. The nature of the violation;
   d. A description of the remedial measures necessary to bring the development activity into compliance with these regulations and a time schedule for the completion of such remedial action.

   Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in these regulations.

3. **Penalties**. In enforcing these regulations, the Planning Board or Conservation Commission may authorize their agents to seek redress through Non-Criminal Disposition. Whoever violates any provision of these regulations may be penalized by a non-criminal disposition as provided in Massachusetts General Laws, Chapter 40, Section 21D and may be punished by a non-criminal fine of fifty dollars ($50.00) for the 1st offense, seventy-five dollars ($75.00) for the 2nd offense, and one hundred dollars ($100.00) for the 3rd offense. Each day a violation continues shall constitute a separate offense.

B. Restoration of Lands. Any violator may be required to restore land to its undisturbed condition.

11. INVALIDITY. The invalidity of any section or provision of these regulations shall not invalidate any other section or provision thereof.